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ABSTRACT

The psychometric adequacy of three sex role instruments was determined by performing a factor analysis on the items in the Bem Sex Role Inventory, the Personal Attributes Questionnaire, and Heilbrun's Masculinity and Feminity Subscales. Subjects were 400 college students who responded to 116 bipolar items from the three instruments. The eleven factor solution which emerged did not demonstrate the psychometric adequacy of the three instruments and suggested that sex roles may require multidimensional measurement. (Author/RL)

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THE PSYCHOMETRIC ADEQUACY OF THREE SELECTED SEX ROLE INSTRUMENTS[1]

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Summary.--The psychometric adequacy of three sex role instruments was determined by performing a factor analysis on the items in the Bem Sex Role Inventory, the Personal Attributes Questionnaire, and Heilbrun's Masculinity and Femininity Subscales. College students (n=400) at a large midwestern university responded to the items from the three instruments. The eleven factor solution which emerged does not demonstrate the psychometric adequacy of the three instruments and suggests that sex roles may require multidimensional measurement.

The conceptualization and measurement of sex roles have undergone radical changes in recent years (Bem, 1974, 1976; Block, 1973; Constantinople, 1973; Kaplan & Bean, 1976; Pleck, 1975; Spence, Helmreich, & Stapp, 1975; Heilbrun, 1976; Berzins, Welling & Wetter, 1978). Psychological androgyny, i. e., the integration of masculine and feminine attributes, has replaced earlier notions that masculinity represents psychological health in men and femininity is associated with psychological health in women. Emprical validation has recommended androgyny as a desirable sex role outcome for both sexes (Bem, 1974, 1975, 1976; Heilbrun, 1968; Spence, Helmreich, & Stapp, 1975).

The renewed interest in masculinity and femininity is evidenced by the flood of instrumentation which purports to measure androgyny (Bem, 1974; Berzins, Welling, & Wetter,

1978; Heilbrun, 1976; Spence, Helmreich, & Stapp, 1975). Validation of the instruments have resulted in mixed findings (Bem, 1975, 1976, 1977; Bem & Lenney, 1976; Gaudreau, 1977; Wakefield, Sasek, Friedman, & Bowden, 1976, Gross, Batlis, Small, & Erdwins, 1979). Criticism of the sex role instruments has included differences in the conceptualizations of sex role characteristics, psychometric differences among the scales, and differences in the statistical procedures that are used to classify subjects (Kelly & Worell, 1977; Worell, 1978).

The present study was undertaken to investigate the psychometric adequacy of three sex roles instruments: the Bem Sex Role Instrument, the Personal Attributes Questionnaire, and Heilbrun's Masculinity and Femininity Subscales. In order to support the psychometric adequacy of these instruments, it is necessary to demonstrate that responses can be reduced to two orthogonal dimensions and that appropriate items define masculinity-femininity factors. The factor analysis of the items in the three instruments was performed in order to answer the following two research questions:

1. What are the factors that define the sex roles in the Bem Sex Role Inventory, the Personal Attributes Questionnaire, and Heilbrun's Masculinity and Femininity Scales?
2. How do these factors relate to each other?

METHOD

Subjects

Subjects were 400 undergraduates enrolled in speech communication courses at a large midwestern university.

Procedure

An instrument consisting of one hundred sixteen bipolar items was administered at the beginning of an academic term. This instrument included all of the items from the BSRI, the PAQ, and Heilbrun's scales with no repeated items. Each of the items was placed on a ninety-nine point scale since, in the case of large numbers of categories, normal deviates result in an increasing, monotonic relationship between reliability and number of categories. These transformations weight highly the response differences on the ends of the scale and weight relatively lower the differences in the center of the scale. In addition, such transformations allow both the mean and the variance more independence across items (Liu, 1971; Warren, Klonglan, and Sabri, 1969). The items were alphabetized for presentation.

Measures

The instrument used in this study consisted of items from the Bem Sex Role Inventory (BSRI: Bem, 1974), the Personal Attributes Questionnaire (PAQ: Spence, Helmreich, & Stapp, 1974), and Heilbrun's Masculinity and Femininity

Subscales (Heilbrun, 1976). The BSRI was based on the conception of the sex-typed person as one who had internalized the societal sex-standard of desirable behavior. Social desirability, not differential endorsement, by men and women was used as Bem's standard. The BSRI allows independent measurement of masculinity and femininity, but lacks the ability to identify people low in both masculinity and femininity. Subjects are identified as masculine, feminine, or androgynous on the Bem scale. The self-report instrument requests reactions to sixty personality characteristics that are each placed on a seven-point scale. Twenty adjectives describe masculine personality characteristics (e. g., self-reliant, independent); twenty adjectives describe feminine personality characteristics (e. g., gentle, understanding); and twenty adjectives are undifferentiated (e.g., happy, conceited) which serve as fillers. Bem reports high internal consistency, discriminant validity, test-retest reliability, and convergent validity when compared to other measures of masculinity-femininity (Bem, 1974).

The PAQ consists of items that differentiate between the sexes stereotypically and on self-report. The PAQ, unlike the BSRI, can identify persons who are low in both masculinity and femininity. This self-report instrument consists of twenty-four trait descriptions set up on a five point bipolar scale. The questionnaire is divided into three separate eight-item scales, labeled Masculinity (M), Femininity (F), and Masculinity-Femininity (M-F). The

Masculinity scale includes items that males are believed to possess in greater abundance than females (e.g., independence, competitiveness); the Femininity scale includes items that females possess to a greater degree than males (e.g., gentleness, helpfulness); and the Masculinity-Femininity scale consists of characteristics whose social desirability appears to vary in the two sexes (e. g., submission is judged to be desirable in females and dominance is desirable in males). Spence, Helmreich, and Stapp report internal consistency, discriminant validity, and reliability (Spence, Helmreich, 1978).

Heilbrun showed the usefulness of drawing masculine and feminine subscales from existing psychological instruments when he identified Masculinity and Femininity Subscales from an earlier bipolar index which was based on the Adjective Check List (Cosentino & Heilbrun, 1964). Heilbrun's instrument assumed a four quadrant scoring system including masculine, feminine, androgynous, and undifferentiated. This instrument includes 54 items: 28 masculine and 26 feminine. The respondent is asked to check those items that he or she considers characteristic of his or her own behavior. Typical masculine items are arrogant, cynical, and outspoken; typical feminine items include considerate, excitable, and talkative. Heilbrun reports convergent validity when compared to other measures of masculinity-femininity, test-retest reliability, internal consistency, and discriminant validity (Heilbrun, 1976).

Statistical Analysis

Transformations on the data were made (Wolins and Dickinson, 1973) and the psychometric adequacy of the sex role inventories was investigated using a principal components factor analysis with varimax rotation (Harman, 1976). The highest correlation in each row was placed in the diagonal. The eigenvalues for the first fifteen factors before rotation are reported in Table 1. Ten through four-

(INSERT TABLE 1 HERE.)

teen factors were rotated on the basis of the scree test (Cattell, 1966), and each solution was inspected. Since the twelve, thirteen, and fourteen factor solutions were uninterpretable, the eleven factor solution was adopted. These eleven factors accounted for 40% of the total variance.

RESULTS

The eleven factors which emerged from the three instruments are given in Table 2. These factors were labeled and

(INSERT TABLE 2 HERE.)

are reported below with their salient items:

Factor 1 (F1). Empathic indicates that the subject demonstrates warmth and sensitivity to others. This factor includes the items "gentle" (.73), "sensitive to others" (.70), "sympathetic" (.70), "tender" (.70), and "warm" (.74).

Factor 2 (F2). Dominant suggests that the person is strong and talkative. This factor is characterized by "timid" (-.70), "shy" (-.66), "talkative" (.62), "soft-spoken" (-.61), "goes to pieces under pressure" (-.60), "has strong personality" (.59), "very submissive" (-.59), and "outspoken" (.56).

Factor 3 (F3). Unfeeling characterizes the person who neither feels nor shows his or her emotions. This factor includes the items "never cries" (.55), "worrying" (-.55), "not at all emotional" (.54), "very little need for security" (.53), and "feelings not easily hurt" (.49).

Factor 4 (F4). Feminine suggests that the person is not masculine. This factor is fairly useless since it is devoid of very much content and merely identifies people as "feminine" or "masculine." It includes "feminine" (.66), "masculine" (-.66), "does not use harsh language" (.44), and "tough" (-.49).

Factor 5 (F5). Leader includes both social and task personality characteristics that typify competent leadership. This factor is identified by "adaptable" (.56), "considerate" (.55), "cooperative" (.54), "acts as a leader," .52), "ambitious" (.50), "appreciative" (.46), "assertive" (.43), "confident" (.41), and "cheerful" (.42).

Factor 6 (F6). Unorganized suggests that the subject is neither systematic nor efficient. It is characterized by two items: "inefficient" (.49) and "unsystematic" (.43).

Factor 7 (F7). Incisive characterizes the person who systematically determines an answer and then defends it. This factor includes the items "hard-headed" (.44), "defends own beliefs" (.43), "deliberate" (.41), and "analytical" (.40).

Factor 8 (F8). Clever identifies the person who is "ingenious" (.69) and "inventive" (.71).

Factor 9 (F9). Independent suggests that the subject does not rely on others, but is capable of taking care of himself or herself. This factor includes "self-reliant" (.67) and "self-sufficient" (.63).

Factor 10 (F10). Insensitive characterizes the person who does not demonstrate concern for others and shows excessive pride. This factor is identified by "conceited" (.47), "arrogant" (.46), "frivolous" (.38), "not at all aware of feelings of others" (.37), and "not at all helpful to others" (.32).

Factor 11 (F11). Diplomatic identifies the person who is well-liked and demonstrates savoir-faire. This factor includes "sharp-witted" (.38), "likable" (.36), "has leadership ability" (.36), and "tactful" (.33).

These eleven factors are orthogonal, but correlations among the scores on the factors were run to further clarify the relationship among the factors. The correlations among the scores on the eleven factors are provided in Table 3.

(INSERT TABLE 3 HERE.)

DISCUSSION

The psychometric adequacy of the three instruments was not demonstrated in this study. Eleven factors were extracted from the three selected sex role instruments. Factors 1, 4, 5, 7, and 11 included items from the Bem Sex Role Inventory and the Heilbrun Masculinity and Femininity Scales. Factor 3 was derived from items on the Personal Attributes Questionnaire and the Heilbrun instrument. Factors 6 and 9 included items that were exclusively from the Bem scale and factor 8 came exclusively from the Heilbrun Masculinity and Femininity Scales.

The Bem Sex Role Inventory allowed a nine factor solution: dominant, insensitive, empathic, feminine, leader, incisive, diplomatic, unorganized and independent. The Personal Attributes Questionnaire included three factors: dominant, insensitive, and unfeeling. Heilbrun's Masculinity and Femininity Scales allowed nine factors: dominant, insensitive, empathic, feminine, leader, incisive, diplomatic, unfeeling, and clever.

Factor 4 primarily indicated femininity or masculinity of the subject. Surprisingly, this factor was devoid of very much content. Based on earlier research, this factor should not have been orthogonal to some of the other factors.

Empathic (F1) has been identified as a feminine characteristic, while dominant (F2), unfeeling (F3), incisive (F7), independent (F9), and insensitive (F10) have been determined to describe masculinity. The factor analysis and the correlations among the scores on the eleven factors clearly demonstrate that no such relationship was established in this study.

The emergence of eleven factors suggests a more complex situation than that suggested by the masculine-feminine dichotomy. Accurate assessment of sex role appears to require multidimensional measurement. At any rate, it can be concluded that the psychometric adequacy of the three sex role instruments selected for investigation in this study is not sufficient to warrant satisfactory results in measuring sex roles.

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TABLE 1 EIGENVALUES FOR FIRST FIFTEEN FACTORS

Factor	Eigenvalue
Factor I	17.51
Factor II	8.55
Factor III	4.72
Factor IV	3.06
Factor V	2.36
Factor VI	2.18
Factor VII	1.95
Factor VIII	1.79
Factor IX	1.58
Factor X	1.48
Factor XI	1.32
Factor XII	1.27
Factor XIII	1.24
Factor XIV	1.04
Factor XV	1.01

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

	Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
1.	Not at all able to devote self completely to others	P	-.24	-.01	.02	.03	.01	-.15	-.02	.31	-.17	-.25	.03
2.	Acts as a leader	B	.07	.30	.00	-.13	.52	-.02	-.16	-.07	-.14	.00	.06
3.	Adaptable	B	.31	-.01	.14	-.01	.56	-.13	-.05	-.07	.02	.07	-.22
4.	Affectionate	B	.47	.11	-.17	-.00	.37	-.09	-.10	.04	.12	.10	.47
5.	Not at all aggressive	B	-.00	-.45	.13	.33	-.01	-.20	.06	.08	-.05	-.05	.08
6.	Ambitious	B	.20	.09	.06	.03	.50	.13	-.21	-.11	-.18	.07	.03
7.	Analytical	B	.15	-.04	.02	.02	.12	.04	-.40	-.19	-.03	.16	-.02
8.	Appreciative	H	.39	-.00	.01	.11	.46	.07	-.09	-.11	.01	.20	-.11
9.	Arrogant	H	-.13	.06	-.02	-.13	-.08	-.09	-.08	-.07	-.01	-.46	-.01
10.	Assertive	B&H	.11	.36	.04	-.05	.43	.05	-.24	-.14	-.06	.03	.10
11.	Athletic	B	.16	.13	.13	-.27	.36	.12	.12	.24	.00	.04	.14
12.	Autocratic	H	-.06	.04	-.00	-.01	.15	-.15	-.25	-.19	.02	-.00	.03
13.	Not at all aware of feelings of others	P	-.36	.01	.11	-.01	.01	-.03	-.05	.19	-.08	-.37	.01
14.	Cheerful	B	.29	.26	-.01	.08	.42	.09	.09	-.16	-.00	-.04	.15
15.	Childlike	B	.02	-.14	-.29	.04	-.07	-.24	.18	-.11	.13	.19	-.03

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

	Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F1
16.	Very cold in relations with others	P	-.52	-.23	.13	.01	-.08	-.08	-.06	.05	-.13	-.29	.09
17.	Compassionate	B	.39	.08	-.09	-.09	.20	-.03	-.08	.01	-.04	.10	-.14
18.	Not at all competitive	P&B	-.09	-.15	.03	.30	-.20	-.19	-.01	.16	.02	-.29	-.23
19.	Conceited	H&B	-.25	.12	-.03	-.08	-.11	-.02	-.12	.01	.02	-.47	.05
20.	Confident	H	.22	.29	.31	.00	.43	.27	-.05	-.13	-.04	-.04	.11
21.	Considerate	H	.46	-.03	.06	.12	.55	.17	-.12	-.02	.08	.14	.08
22.	Contented	H	.28	.14	.17	.28	.35	.31	.04	-.22	.16	-.08	.02
23.	Cooperative	H	.46	-.10	.09	.11	.53	.22	.09	-.09	.00	.09	.01
24.	Conscientious	B	.38	-.06	-.11	.12	.36	.31	-.15	.02	-.11	.11	.02
25.	Conventional	B	.06	-.18	-.14	.02	.17	.30	.09	.08	-.12	-.06	.12
26.	Never cries	P	-.18	-.08	.55	-.19	.15	.12	.04	-.17	-.07	-.03	.01
27.	Cynical	H	-.25	.03	-.11	-.28	-.04	-.07	-.19	-.01	.04	-.08	-.10
28.	Defends own beliefs	B	.29	.26	.14	-.02	.32	.07	-.43	-.00	.12	-.11	.05
29.	Deliberate	H	.31	.01	.17	-.07	.22	.22	-.41	.03	-.07	-.02	.02
30.	Dependent	H	.05	-.10	-.24	.07	.05	.00	.05	.09	.17	-.16	.04
31.	Dominant	B,H,&P	.02	.49	.03	-.23	.18	.02	-.31	-.00	-.14	-.13	.07

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
32. Eager to soothe hurt feelings	B	.57	-.05	-.14	-.03	.26	.05	.05	.26	.07	-.09	-.08
33. Not at all emotional	H&P	-.36	-.09	.54	.01	.10	.08	.05	-.01	-.02	-.08	.15
34. Enterprising	H	.11	.09	-.04	-.11	.40	-.01	-.12	-.38	-.16	.09	.12
35. Excitable	H	.30	.12	-.44	-.10	.27	-.07	.05	-.08	-.08	-.16	.00
36. Not at all excitable in a major crisis	P	-.02	.00	.43	-.08	.03	-.19	-.08	-.00	.04	.00	-.09
37. Feelings not easily hurt	P	-.16	-.02	.49	-.01	.17	-.00	.05	-.03	-.06	-.11	.05
38. Fearful	H	-.01	-.24	-.44	.08	-.04	-.04	.07	.03	.05	-.05	.19
39. Feminine	H&B	.09	.05	-.50	.66	.08	-.01	.00	-.04	-.05	.01	-.07
40. Fickle	H	-.13	-.18	-.28	.06	-.06	-.08	.16	-.03	.03	-.24	-.09
41. Flatterable	B	.14	.07	-.25	-.03	-.02	-.14	.05	-.17	.11	-.15	.15
42. Forceful	H&B	.04	.36	.00	-.31	.21	.03	-.34	-.17	-.07	-.22	.12
43. Foresigted	H	.19	.12	.19	-.05	.06	.21	-.26	-.21	.01	.11	.07
44. Forgiving	H	.47	-.11	.20	.05	.16	.11	.11	.00	.04	-.06	-.11
45. Frank	H	.27	.19	.20	-.09	-.00	-.03	-.34	-.08	-.16	-.02	-.27
46. Friendly	H&B	.51	.27	.06	-.05	.24	.04	.04	-.10	-.09	-.07	.08
47. Frivolous	H	-.04	.02	-.19	-.05	-.04	-.11	.04	-.04	.07	-.38	-.07

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

	Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F1
48.	Gentle	B	.72	-.11	-.03	.05	.03	-.07	-.12	-.01	-.05	.05	-.0(
49.	Gullible	B	.02	-.11	-.42	.20	.03	-.12	.16	-.03	.01	-.21	-.0:
50.	Can make decisions easily	P&B	.06	.24	.37	-.12	.19	.08	-.23	-.20	-.05	-.04	.1:
51.	Gives up easily	P	-.17	-.20	-.12	.18	-.03	-.39	.11	.17	.05	-.18	.0(
52.	Handsome	H	.26	.19	.16	-.17	.14	.03	-.03	-.12	.06	-.15	.3]
53.	Happy	B	.49	.29	.06	.19	.21	.21	.12	-.23	.03	-.11	.1!
54.	Hard-headed	H	-.07	.12	-.20	-.16	.02	-.05	-.44	-.01	.04	-.19	-.0]
55.	Does not use harsh language	B	.24	-.08	.02	.44	.06	.11	-.00	.05	.03	.01	.0(
56.	Not at all helpful to others	B,H,&P	-.41	-.16	.06	:02	-.15	-.30	-.01	.20	-.16	-.31	.1:
57.	Very home oriented	P	.19	-.20	-.14	.20	-.02	.15	-.01	.07	.02	-.11	.1:
58.	Not at all independent	P&B	-.18	-.27	-.21	.13	-.16	-.07	.07	.13	.27	-.10	.1(
59.	Indifferent to others approval	P	-.07	.05	.37	.02	.01	.05	-.26	-.01	-.09	-.08	.0(
60.	Individualistic	B	.28	.26	.08	.07	.15	-.00	-.24	-.34	-.16	.00	-.0!
61.	Industrious	H	.34	.06	.08	-.02	.20	.08	-.17	-.40	-.30	.03	-.0]

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

	Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F1
62.	Inefficient	B	-.18	-.10	-.04	-.01	-.05	-.49	.02	.17	-.05	-.12	-.10
63.	Feels very inferior	P	-.10	-.38	-.37	.04	.02	-.14	-.08	.12	-.03	.04	-.17
64.	Ingenious	H	.16	.14	.08	-.05	.06	.04	-.14	-.69	-.04	-.01	.06
65.	Inventive	H	.16	.01	.05	-.07	.12	.01	-.06	-.71	-.07	-.01	-.01
66.	Jealous	B	.03	-.06	-.43	-.30	.01	-.10	-.05	-.71	.01	-.07	.12
67.	Jolly	H	.43	.22	-.04	.03	.10	.04	.11	-.34	.11	-.18	.16
68.	Not at all kind	P	-.59	-.06	.06	.05	-.12	-.17	-.08	.13	-.05	-.23	.07
69.	Has leadership abilities	B	.21	.43	-.00	-.11	.26	-.02	-.05	-.10	-.23	.07	.36
70.	Likable	B	.50	.25	.03	-.00	.24	-.01	.10	-.18	-.26	.03	.36
71.	Loves children	B	.51	-.01	-.03	-.10	.09	-.02	.13	-.04	-.16	.02	.11
72.	Loyal	B	.61	.05	-.04	.03	.10	-.02	-.14	-.06	-.24	.12	.03
73.	Masculine	H&B	-.00	-.02	.46	-.66	-.01	-.07	-.04	.00	-.01	-.08	.11
74.	Modest	H	.31	-.08	.01	.07	.10	.12	-.02	.01	-.13	.16	.07
75.	Moody	B	.01	-.11	-.36	-.22	.01	-.13	-.17	-.04	-.13	-.13	-.03
76.	Opportunistic	H	.15	.22	.04	-.16	.23	.02	-.06	-.33	-.08	.06	.14
77.	Outspoken	H	.06	.56	.02	-.12	-.03	-.13	-.34	-.11	-.02	-.14	-.01

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
78. Very passive	P	-.12	-.60	.04	.07	-.25	-.13	-.02	.13	.04	-.10	-.09
79. Goes to pieces under pressure	P	-.34	-.29	-.25	.10	-.04	-.23	.07	.16	.03	-.24	.06
80. Praising	H	.44	.09	-.02	.10	.00	.13	.01	-.18	.05	-.03	.05
81. Reliable	B	.44	.06	.02	.04	.09	.17	-.08	-.15	-.11	.09	.25
82. Very rough	P	-.47	.09	.17	-.28	.10	.16	-.01	-.00	-.03	-.19	-.17
83. Secretive	B	-.03	-.19	.04	-.10	.19	-.17	-.03	-.04	-.21	-.06	.12
84. Very little need for security	P	-.10	.06	.53	-.11	.08	.05	-.00	-.02	-.26	-.08	-.02
85. Not at all self-confident	H&P	-.12	-.46	-.30	.08	-.06	-.24	-.08	.24	.05	-.12	-.09
86. Self-reliant	B	.35	.19	.16	-.03	.09	.01	-.03	-.12	-.66	.01	.01
87. Self-sufficient	B	.34	.13	.22	-.08	.10	.10	.01	-.17	-.63	-.02	.02
88. Sensitive to the needs of others	H&B	.70	.12	-.07	.08	.15	.03	-.05	-.06	-.13	.07	.12
89. Sentimental	H	.54	.02	-.33	.02	.04	-.10	-.03	.04	-.13	.02	.21
90. Sharp-witted	H	.35	.30	.06	-.12	-.01	-.09	-.10	-.26	.05	-.03	.38
91. Shrewd	H	-.12	.09	.06	-.27	-.16	-.07	-.27	-.21	.16	-.03	.06

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

	Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F1
92.	Shy	B	.05	-.66	-.13	-.08	.04	.00	-.08	-.05	.05	.06	.12
93.	Sincere	H&B	.55	-.02	-.06	.11	.08	.08	-.22	-.14	-.07	.07	-.03
94.	Soft-spoken	B	.23	-.61	-.02	-.04	-.06	.18	-.01	.09	-.05	.00	.04
95.	Solemn	B	.00	-.33	-.02	-.17	-.10	.25	-.16	-.01	-.10	-.06	-.04
96.	Stern	H	-.19	.15	-.00	-.40	-.06	.19	-.21	-.06	-.11	-.16	.02
97.	Strong	H	.32	.28	.17	-.33	.10	.11	-.08	-.17	-.17	-.07	.02
98.	Has strong personality	B	.36	.59	.05	-.36	.10	-.02	-.16	-.20	-.11	-.03	.01
99.	Very submissive	H&P	-.03	-.58	-.07	.19	-.03	-.07	.27	.01	.11	-.02	-.23
100.	Sympathetic	H&B	.70	.04	-.14	.06	.04	-.05	-.07	-.10	-.02	-.06	-.03
101.	Tactful	B	.31	.09	.04	.12	.15	-.02	-.11	-.14	-.04	.17	.33
102.	Talkative	H	.27	.62	-.18	.05	.06	-.08	-.07	-.07	.02	-.10	.07
103.	Tender	B	.70	.09	-.28	.10	-.01	-.07	-.14	-.08	-.02	-.01	.11
104.	Theatrical	B	.05	.09	-.10	-.03	-.07	-.36	-.07	-.12	-.01	.01	.07
105.	Timid	H	-.01	-.70	-.15	-.02	.04	.00	-.02	-.05	.02	-.07	-.00
106.	Tough	H	-.10	.28	.21	-.49	.06	.18	-.09	-.07	-.08	-.20	-.08
107.	Truthful	B	.46	.10	.01	.13	.10	.15	-.21	-.12	-.03	.13	.11
108.	Not at all understanding of others	B&P	-.53	-.10	.09	-.11	-.17	-.27	-.08	.15	-.14	-.24	.08
109.	Unpredictable	B	.04	.11	-.18	-.01	-.02	-.37	-.08	-.15	-.06	-.11	.07

TABLE 2 FACTOR LOADINGS OF THE ITEMS FROM THE BEM SEX ROLE INVENTORY, THE PERSONAL ATTRIBUTES QUESTIONNAIRE, AND HEILBRUN'S MASCULINITY AND FEMININITY SUBSCALES

Item	Instrument	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
110. Unsystematic	B	-.05	-.02	-.06	-.06	-.07	-.43	.13	.12	.14	-.22	-.05
111. Vindictive	H	-.19	-.03	-.18	-.37	.14	-.21	.01	.08	-.02	.00	-.09
112. Warm	B&H	.74	.20	-.12	.11	.03	-.03	-.03	.00	-.08	.11	.07
113. Willing to take risks	B	.26	.31	.26	-.24	.05	-.07	-.14	-.28	-.11	-.05	-.17
114. Willing to take a stand	B	.36	.45	.23	-.12	.07	-.02	-.39	-.12	-.07	-.01	-.05
115. Worrying	H	.07	-.06	-.55	-.03	.07	.03	-.19	.09	-.04	-.11	-.11
116. Yielding	B	.17	-.23	-.22	-.02	.06	.09	.04	-.09	-.07	-.06	-.13

TABLE 3 CORRELATIONS AMONG THE SCORES ON THE ELEVEN FACTORS

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
F1	X	.12	-.32	.22	.44	-.15	.29	.22	.37	-.33	.51
F2		X	.01	.01	.19	-.09	.15	.14	.19	-.01	.37
F3			X	-.43	.04	-.07	-.05	.07	.16	.09	-.00
F4				X	.06	-.01	-.08	-.09	-.08	-.10	-.03
F5					X	-.25	.42	.30	.33	-.31	.47
F6						X	-.23	-.18	-.19	.25	-.19
F7							X	.23	.21	-.05	.26
F8								X	.26	-.14	.33
F9									X	-.15	.42
F10										X	-.22
F11											X